

Chapter 1 Introduction

1-1. Purpose and Scope

This manual provides information and criteria pertinent to the selection, installation, and maintenance of wire rope and fittings. It applies primarily to gate-operating devices within the Corps of Engineers' responsibility.

1-2. Applicability

This manual applies to all USACE Commands having civil works responsibilities.

1-3. References

The required and related publications are listed in Appendix A.

1-4. Distribution Statement

Approved for public release; distribution is unlimited.

1-5. Wire Rope Failure, Service Conditions, and This Manual

a. The Corps has recently experienced wire rope failures at a number of projects. These failures

prompted the development of this manual. Wire rope failures typically render gates inoperable causing delays to navigation, flooding potential, equipment damage, and possibly even personnel injury.

b. A unique problem facing the Corps is the wide variety of wire rope service conditions, which are determined by rope and hoisting equipment design, frequency of use, and the operating environments that exist at Corps installations. This manual covers many of these conditions and presents the latest state-of-the-art technology from commercial and industrial sources and information from existing Corps projects. Its purpose is to optimize the service life of wire rope, and to reduce the likelihood of future failures.

c. Chapters 2 and 3 present information on construction and materials for rope and fittings. Chapter 4 presents the calculations/data to select rope within engineering standards. Chapter 5 explains how to specify or order rope. Chapter 6 presents information on accepting and installing rope, and Chapter 7 covers inspection and maintenance.